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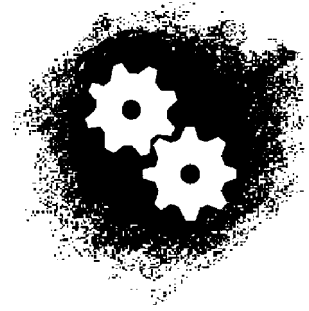
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RESPONSIBLE CHAIN MANAGEMENT: A CAPABILITY ASSESSMENT FRAMEWORK



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In recent years, increased attention has been paid to issues of responsibility across the entire product lifecycle. Responsible behaviour of organizations in the product chain is dependent on the actions of other parties such as suppliers and customers. Only through co-operation and close interaction between the different parties involved is it possible to come to a specified form of responsible chain management. Drawing on stakeholder theory and literature on the resource-based view of the firm, this article presents a framework for assessing the organizational capabilities of responding to claims from internal and external parties. Interpretations of stakeholder interests, integration into business processes, monitoring these processes, and communication with stakeholders are the central processes in this framework. The application of this framework to three cases of responsible

chain management illustrates the functioning of the framework as a tool for assessing organizational capabilities. Copyright © 2002 John Wiley & Sons, Ltd and ERP Environment.

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INTRODUCTION

Traditionally, customer demands have focused mainly on costs and the quality of products. Nowadays attention to products' characteristics is broadening and the entire product lifecycle is increasingly considered. Products' characteristics, and the way they have been produced, transported and are disposed of, are gaining importance. Customers, for example, can choose to buy coffee that is produced under improved labour conditions and with ecological care. In the textile industry there are several initiatives to prevent child labour and the use of poisonous production methods, while monitoring and decreasing a product's environmental impacts are also gaining importance. Whereas, earlier,

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attention to these kinds of demands was generally restricted to certain branches, such as the petrochemical and food industries, it now seems to pervade almost every part of business. In addition, the number of stakeholders posing questions about responsibility issues is increasing. At first, action groups and governments were especially interested. Nowadays, customers and even shareholders are becoming interested and place demands related to these issues.

The increasing attention to the responsibility of a company for its products across their entire lifecycles imposes large demands on an organization. What are the responsibilities of such an organization with respect to the product chain? How could it become and remain receptive to changing stakeholder demands, and anticipate these demands? It is not realistic to try and answer all these questions in one paper. To deal with issues of responsibility, an organization needs to develop, apply and maintain specific capabilities. Therefore we focus, in this paper, on the following central research question:

What organizational capabilities are necessary for responsible chain management?

To examine organizational capabilities, we first present an overview of the literature on responsible chain management and organizational capabilities. Responsible chain management is defined here as managing issues of responsibility across the product lifecycle. Based on this review of theory, a framework is proposed for identifying those organizational capabilities that are necessary for building and maintaining an interactive relationship with stakeholders both inside and outside an organization. This framework is then applied to three practical initiatives on responsible chain management to illustrate its use as an instrument for analysis. We conclude with some final remarks on the use and possible further development of the framework proposed.

RESPONSIBLE CHAIN MANAGEMENT

In order to obtain a clear view on the meaning of responsible chain management it is necessary to define 'responsibility'. Interpretations of the term responsibility have changed over time and, moreover, depend on which stakeholder is asked. Without entering into a debate on terminology, we will briefly discuss some properties of this concept. According to Lenk (1992), responsibility is based on sincere expectations to act in a desired way. This implies that responsibility in an organizational context can originate from expectations within the organization, and from the existing, realized or unrealized expectations of stakeholders (Kaptein, 1999). For responsible chain management a continuous alignment of these different internal and external expectations is necessary. This alignment will be a central notion in our line of reasoning when dealing with issues of responsibility in the product chain. Our concept of responsibility leads to a consideration of the different parties within and around an organization. This view on organizations is connected to stakeholder theory. In this area of literature, an organization is perceived to be a network of relationships (see, e.g., Freeman, 1984). An organization can only obtain good results if several parties within and outside the actual organization work together and are willing to deliver their necessary contributions. These parties need each other and are affected by the actions of each other, and thus they all have a stake in the organization. From this viewpoint, an organization has many parties that could be acknowledged as stakeholders. The actual stakeholders will depend on the situation but, in general, stakeholders such as customers, suppliers, shareholders, employees, the government, and society at large, can be distinguished.

Especially in American literature there has been, for some years, intense discussion on the different concepts of stakeholder theory (see, e.g., Donaldson and Preston, 1995; Mitchell



et al., 1997). Here, we do not focus on these discussions, rather we emphasize that the stakeholder concept of an organization contradicts the property-based view that usually defends the interests of the shareholders. In the stakeholder view, management has to manage the relationships with stakeholders in such a way that it takes into account their interests. In this view, managers have a responsibility not only towards the owners of the firm, but towards all stakeholders (Freeman, 1984). Hence, responsible behaviour is not determined solely by an organization, but also by its stakeholders since they have certain expectations of an organization.

Donaldson and Preston (1995, p. 67) define stakeholders as 'persons or groups with legitimate interests in procedural and/or substantive aspects of corporate activity'. Also, stakeholders 'are identified through the actual or potential harms and benefits that they experience or anticipate experiencing as a result of the firm's actions or inactions' (p. 85). Responsible chain management could thus involve a multitude of stakeholders, especially as the entire product lifecycle is increasingly considered. In a study on stakeholders in environmental issues, Fineman and Clarke (1996, p. 715) also view managers as 'crucial mediators of stakeholder influence; how they identify, define and construct stakeholders is an important feature of the meaning of greening and an industry's subsequent response'. This viewpoint is useful when reasoning from a firm's perspective. A firm's response to issues of responsibility, and the way they organize to respond to stakeholder demands, is likely to be guided by the perception of the issues involved and the reaction of others to that perception. A stakeholder's power thus could be regarded as depending on the nature and the level of threat that a stakeholder poses to a firm, and on the stakeholder's perceived legitimacy (Fineman and Clarke, 1996). Similarly, Mitchell *et al.* (1997) define power, legitimacy and urgency as the main attributes of stakeholders.

Viewing decision-makers as mediators on these attributes could shed light on a firm's motivations for engaging in responsible chain management, and on the way this is brought into practice.

This discussion of the literature on responsibility and stakeholder theory makes clear that perceptions of what is legitimate and responsible can change over time. It depends on the expectations and power of the specific stakeholders in and around an organization. *Therefore, the capabilities necessary to address the perceived legitimate stakeholder interests need to have a dynamic nature.* An organization needs capabilities to perceive, reflect and respond to the different claims of stakeholders. These conclusions will be integrated into a framework to assist firms in developing and maintaining the required organizational capabilities needed for responsible chain management. To further examine the concept of organizational capabilities and their development, these themes will first be discussed in the next section.

BUILDING ORGANIZATIONAL CAPABILITIES

Organizational capabilities

To consider the concept of organizational capabilities, we first turn briefly to a wider stream of literature known as the resource-based view of the firm (RBV). Building on the seminal work of Penrose (1959) and others, the RBV (see, for example, Wernerfelt, 1984; Barney, 1991; Grant, 1991) contends that differences in firms' competitive positions can be understood from the firms' specific resources and capabilities. Important elements are valuable, rare and imperfectly imitable resources (Barney, 1991), which constitute firm heterogeneity.

As Peteraf (1993) noted, within the RBV there are subtle variations in terminology that make communication more difficult. Terms such as resources, assets and capabilities are all commonly used but often with slightly



different meanings and contexts. Therefore, a clarification of the terminology as applied in this paper is required. The RBV considers firms as 'bundles of resources' (Wernerfelt, 1984) that are needed to perform activities of value-creation. These resources are defined as all the assets and capabilities of a firm (den Hond, 1996). Assets can be both tangible and intangible. Given the scope of this paper, we focus on the capability literature, which could be regarded as the RBV subset that applies a more dynamic view. A capability can be defined as 'a firm's capacity to deploy Resources, usually in combination, using organizational processes, to effect a desired end' (Amit and Schoemaker, 1993, p. 35). Co-ordination and deployment of resources to intentionally perform tasks are thus key attributes of capabilities.

We look specifically at organizational capabilities. Collis (1994, p. 145) defines these as 'the socially complex routines that determine the efficiency with which firms physically transform inputs into outputs'. For the purpose of this paper it is important to note that certain organizational capabilities are required for enabling a firm to deal with the process of organizing responsible chain management. A dynamic perspective then is useful for remaining aligned with frequently changing stakeholder demands and business requirements; the composition and quality of a firm's resource and capability base need to be maintained through continuous effort. This demands a continuous realignment of existing capabilities to those preferred or required. Dynamic capabilities thus could be defined as 'the firm's ability to integrate, build, and reconfigure internal and external competences to address rapidly changing environments' (Teece *et al.*, 1997, p. 516).

Organizational capabilities for responsible chain management

Relating insights from RBV and capability literature to stakeholder interests and issues of responsible chain management is not new.

Hart (1995), for instance, proposed a natural-resource-based view of the firm including environmental considerations within the RBV. Sharma and Vredenburg (1998) empirically studied proactive environmental management in relation to organizational capabilities, while Litz (1996) developed a resource-based view of the socially responsible firm. These authors identify relationships between capabilities and stakeholders regarding elements of responsible chain management. Hart (1995, p. 1001) for example proposes 'Firms that adopt product-stewardship strategies will evidence inclusion of external stakeholders in product-development and planning processes', while Sharma and Vredenburg (1998) view stakeholder integration as an important capability for environmental responsiveness. The question is *how to shape such organizational capabilities with regard to responsible chain management*.

The concept of responsibility is linked to dynamic organizational capabilities as these capabilities represent an ability to change or align a firm's activities, thereby addressing certain expectations. Various relevant theoretical models have been developed to describe and analyse these capability building processes, a few of which are briefly discussed below.

In terms of responsibility, the social and ethical dimensions of organizational resources and capabilities can be considered (Litz, 1996). Since firms are required to satisfy at least some stakeholder interests in order to be able to operate, they first need to perceive or recognize these stakeholders' demands. Following stakeholder perception, moral judgements have to be made to arrive at an adequate response to the perceived legitimate stakeholder interests: ethical deliberation. Finally, that response has to be developed. Issues management implies the 'ability to respond in a timely and decisive manner to relevant stimuli' (Litz, 1996, p. 1359). Litz argued that all three stages of this model could be a source of competitive advantage. 'To the extent the firm is able to recognize its interdependence, reflect upon the ethical standards appropriate to the situation,



and react in a timely and responsive manner, it possesses valuable, rare, inimitable, and non-substitutable assets, that is, it possesses strategic resources' (Litz, 1996, p. 1360).

McDonald and Nijhof (1999) developed a framework that could stimulate morally responsible behaviour in organizations, discerning between political context, organizational and personal levels. Concerning the organizational level, they recommend that within an organization there has to be clarity on norms and values to determine what is responsible, appropriate procedures for decision making are also required, and operational requirements for acting in a responsible manner, like information, financial, equipment and time, must be facilitated.

The role of management

The role of managerial decision-makers is important in capability building processes. 'For managers, the challenge is to identify, develop, protect and deploy resources and capabilities' (Amit and Schoemaker, 1993, p. 33). To describe such processes, Iansiti and Clark (1994) proposed a capability building process model, based on research in product development, that distinguished between a conceptualization and an implementation phase. In the conceptualization phase the capabilities perceived as necessary are compared with those already present, while in the implementation phase the actual development and implementation of selected solutions takes place, leading to new or renewed capabilities. Amit and Schoemaker (1993) state that it is difficult for management to identify, develop and deploy an appropriate mix of strategic assets. They contend that uncertainty, complexity and intraorganizational conflicts hamper decisions on resources and capabilities. Distinguishing between conceptualization and implementation therefore is important. As den Hond (1996, p. 79) indicated, 'strategies may differ among firms in the same industry that face the same issue, because these firms assess differently a

set of potential solutions'. In the *conceptualization* stage the scope of the firm is set: which stakeholders' interests are considered sufficiently important to be addressed? In responsible chain management, not only managers of firms (internal) attempt to conceptualize their firms' strategic environment, but stakeholders themselves (external) also develop their own perceptions. In the *implementation* stage, the organization aims to address these interests. This distinction between the conceptualization stage and the implementation stage is assimilated into our framework.

Internal and external capabilities

A further concept in our approach relates to the internal and external processes necessary for responsible chain management. To clarify this idea we turn to product development theory because this has certain similarities to chain management: in product development many different functions also have to be involved (e.g., design, assembly, marketing). To describe product development in terms of the RBV, Verona (1999) distinguished between functional and integrative capabilities. Functional capabilities deepen a firm's technical knowledge (Grant, 1991; Amit and Schoemaker, 1993), while integrative capabilities enable firms to absorb and disseminate new knowledge (Cohen and Levinthal, 1990; Iansiti and Clark, 1994; Teece *et al.*, 1997). Verona (1999, p. 135) identifies external and internal integrative capabilities as summarized in Figure 1.

One step is correctly conceptualizing the external environment. To implement the resulting findings, internal integrative capabilities are required. Distinguishing between external and internal integration is relevant in responsible chain management as it is the point where perceived (external) stakeholder interests and expectations are translated into (internal) responses. Figure 1 emphasizes the role of management in translating external signals into internal actions. Management's identification, definition and construction of stakeholder



External integrative capabilities	Internal integrative capabilities
<ul style="list-style-type: none"> ■ <i>Managerial processes</i> – external communication, socialisation ■ <i>Managerial systems</i> – empowerment, incentives, recruiting ■ <i>Absorptive structures</i> – networks of collaborations ■ <i>Culture and value</i> for external absorption 	<ul style="list-style-type: none"> ■ <i>Managerial processes</i> - internal communication, integrative strategies, political and financial support, performance measurement ■ <i>Managerial systems</i> - job training, collective brainstorming, incentives ■ <i>Integrative structures</i> - process integration, organisation re-engineering ■ <i>Culture and value</i> for internal integration

Figure 1. External and internal integrative capabilities, adapted from Verona (1999)

interests determine a firm's response to these signals (see, e.g., Fineman and Clarke, 1996). These integrative capabilities alone however do not cover the full breadth of responsible chain management. Combining the different theoretical models as outlined earlier, in the next paragraph we construct a capability cycle and deduce from this cycle a framework for assessing capabilities of responsible chain management.

THE CAPABILITY ASSESSMENT FRAMEWORK

The review of literature on responsibility made clear that responsibility is not a rigid notion but a continuously changing issue involving sets of stakeholders. Integrative capabilities can assist in transforming external expectations into internal actions. Yet, if this were a one-off action, it would only be a temporary solution. To describe and analyse the capability building

process in terms of responsible chain management, a further division into different stages is useful. By combining the approaches outlined earlier, we have developed the capability cycle, presented in Figure 2, which is comparable to the 'plan-do-check-act' cycle from quality management. It consists of four categories, each comprising of a set of capabilities. In line with the RBV, the four categories in this cycle are only described in broad terms, making the capability cycle applicable to many types of organizations.

In the first stage, *interpretation*, signals from stakeholders are considered. This is where capabilities such as responsiveness, knowing how to act (e.g., guided by a code of conduct), and ethical deliberation play a role. During interpretation the different expectations are translated into organizational plans. The second stage, *integration*, subsequently turns these plans into actions. During this stage, processes and products are assessed while focusing on the entire product lifecycle. A way has to

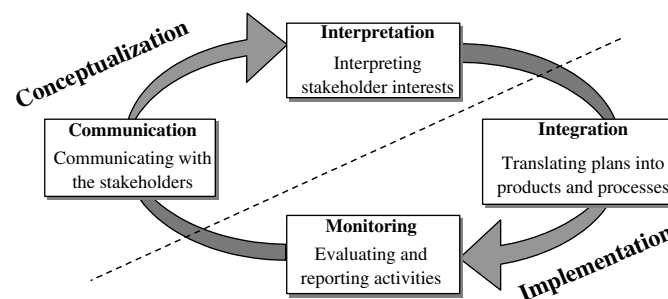


Figure 2. The capability cycle



be found to meet the objectives that were set during the interpretation stage. Solutions could be found from within the firm but, given the chain perspective, are also likely to be found elsewhere within the chain. In the third stage, *monitoring*, the actions undertaken are evaluated and reported upon. Have the objectives been met? Has the response been adequate? Such monitoring could be carried out either internally or externally. To better understand how the responsibility of actions is perceived, the results of monitoring should be discussed with relevant stakeholders. Hence, in the fourth stage, a dialogue with stakeholders should be organized: *communication*. This can determine whether the issues have been sufficiently resolved. If so, a new objective can be set, if not, an adjustment to the plans can be made. Either option results in the start of a new capability cycle, emphasizing the

continual character of such a process. Broadening the scope beyond integration does not remove the distinction between internal and external dimensions, as this description of the capability cycle has already suggested. Each category in the cycle has an internal and an external dimension, each comprising a set of capabilities as illustrated in Figure 3.

In addressing issues of responsibility a number of capabilities are involved. Interpretation and consequently integration of stakeholder interests is one part, evaluation of the results, reconfiguration of the firm's activities, and communication on these issues is another. In order to remain aligned with the rapidly changing firm environment, this should be a continual process. To achieve responsible chain management, a well-balanced set of organizational capabilities is required. We argue that this requires every cell in the

	Internal	External
Interpretation	<ul style="list-style-type: none"> ■ Determining a clear mission statement and company policy (management team) ■ Drawing up a code of conduct ■ Determining organisational responsibilities 	<ul style="list-style-type: none"> ■ Discussing organisational responsibilities with, for example, customers, suppliers, special interest groups ■ Organising a stakeholder debate to produce a code of conduct
Integration	<ul style="list-style-type: none"> ■ Translating responsibilities into processes (e.g., selecting and training employees, sales structure) ■ Taking responsibility by changing characteristics of products (e.g., product safety, impact on environment) 	<ul style="list-style-type: none"> ■ Getting other parties in the product chain to accept their responsibility ■ Assisting suppliers in living up to their responsibilities, e.g., by giving them advice or financial support
Monitoring	<ul style="list-style-type: none"> ■ First party auditing. An organisation audits itself ■ Keeping track of data relevant to responsible chain management 	<ul style="list-style-type: none"> ■ Second party auditing. An organisation audits its own suppliers and customers ■ Third party auditing. Audits performed by an independent auditing body
Communication	<ul style="list-style-type: none"> ■ Internally justifying organisational behaviour ■ Establishing management systems (e.g., ISO14001, SA8000) ■ Making relevant information available 	<ul style="list-style-type: none"> ■ Dealing with questions or complaints from stakeholders - being held accountable ■ Labelling of products to show that the products meet certain criteria

Figure 3. A sample framework based on the capability cycle



framework to be sufficiently addressed: *if the internal and external aspects of each category of capabilities are developed in detail then a more thorough understanding of the impacts of issues of responsible chain management will be developed.* Linkages between actions in different categories will be easier to comprehend, while omissions could reflect possible weaknesses. In the next section, the framework is used to assess certain practical initiatives in the field of responsible chain management.

THREE ORGANIZATIONAL INITIATIVES

The conceptual framework proposed in the previous paragraph can be used for different purposes. It can function as a guideline for developing new organizational initiatives in the field of responsible chain management. It can also be used to assess existing initiatives in order to evaluate their comprehensiveness. In this section the latter function is illustrated by analysing three current initiatives:

- (i) Social accountability in the textile industry
- (ii) Product-oriented environmental management
- (iii) Tropical hardwood certification

The selection of these initiatives is based on two criteria. Firstly, all cases had to concentrate on an issue in which stakeholder demands on the responsibility of an organization is clearly articulated. The reason for this is that the need for responsible chain management starts when internal or external stakeholders express their interests and concerns. Secondly, the organizational context of the cases should be as varied as possible to illustrate the broad applicability of the framework. That is why we selected cases on both an organizational and a sectoral level. Next, the cases will be described followed by an assessment based on our framework.

Social accountability in the textile industry

Due to globalization, many products that are sold in the western world are produced in developing countries, where labour is generally cheaper and more available. This sometimes results in the exploitation of workers in degrading situations. It is hardly feasible for customers in the western world to monitor the conditions under which the goods they buy have been produced. However, partly due to the Internet and increased media attention, the harsh situations in some production facilities can be visualized in a very striking manner.

In order to guarantee a certain level of working conditions, the Council on Economic Priorities Accreditation Agency (CEPAA, 1998) developed a Social Accountability standard. The objective of this standard, the SA8000, is to ensure ethical sourcing of goods and services. It promotes socially responsible production both in the western world and abroad (Keegan, 1998). SA8000 can be applied to organizations in all industries. If an organization wants to comply with this voluntary standard, it has to set up a social management system, comparable to quality and environment systems based on the ISO 9000 and 14000 standards. This management system is then examined by an external auditing body.

Using our framework, we can describe the organizational capabilities for SA8000 as depicted in Figure 4. SA8000 represents a consensus of recommendations from the international business community, non-governmental organizations, and labour organizations. Capabilities for external integration thus are present. Capabilities for internal integration also seem

	INTERNAL	EXTERNAL
INTERPRETATION	+	+
INTEGRATION	–	+
MONITORING	–	±
COMMUNICATION	+	–

Figure 4. Capability assessment of SA8000



to be present since SA8000 sets basic standards for child labour, forced labour, health and safety, freedom of association and the right to collective bargaining, discrimination, disciplinary practices, working hours, and compensation. This influences the organizational responsibilities of firms that want to comply with the standard and could serve them as a sort of internal code of conduct.

The difficulty for SA8000 is in the implementation stages: integration and monitoring. Despite its broad applicability, so far the standard has primarily been applied in the toys and textile industries. Especially in the clothing industry, where there are numerous small subcontractors, it is very difficult to monitor all the production facilities. A related problem is that the relatively high level of standards set in SA8000 is beyond reach for most small production facilities (Jonker, 1999). An export store can apply for SA8000 certification despite acquiring its products from domestic non-certified producers. To overcome these difficulties, C&A, a large clothing retailer of German origin, for instance is attempting to deal with this problem using an alternative system (Socam, 1998). Based on C&A's own code of conduct, an affiliated auditing company has started to monitor processes at the small production facilities where the problems are considered the most urgent. The intention of these monitoring visits is to initiate an improvement programme for working conditions. C&A is thereby attempting to have a broader perspective of their products' life-cycles and the associated responsibilities for these. However, the monitoring process is not fully independent as the firm conducting the audits is part of C&A. Such second party auditing, although aimed at other chain partners (the small production facilities), could lead to problems in the communication stage. While monitoring reports can be presented, these are not verified independently, which might lead to debates with certain stakeholders such as customers or special interest groups.

Product-oriented environmental management

The notion of extended producer responsibility has led to several national and international policies that take products' environmental characteristics into account (e.g., Scholl, 1996; VROM, 1999). In applying Product-Oriented Environmental Management (POEM), an organization accepts responsibility for systematically considering decreasing the total environmental burden of their products over the entire product lifecycle. A firm then has to develop an understanding of the environmental characteristics of its products, has to establish contacts on environmental issues with chain partners such as suppliers and customers, and has to systematically embed this way of working into its processes. Alongside chain partners, other stakeholders such as regulators, consumers and special interest groups could also be involved. Hence, in order to manage a product's environmental characteristics, not only capabilities in environmental management are needed, but in stakeholder management as well.

In terms of the capability assessment framework (Figure 5), the role of stakeholders is important in POEM. In firms applying POEM, internal capabilities to interpret issues of responsible chain management often are developed. Lifecycle analyses (LCAs) are performed and published, and a deliberate decision to consider products' environmental characteristics is made. Yet, the accompanying external capabilities are not always as well developed since discussing organizational responsibilities with customers, suppliers and other stakeholders seems to be problematical. Public support for the results of LCAs often appears to be limited, especially when many

	INTERNAL	EXTERNAL
INTERPRETATION	+	–
INTEGRATION	+	±
MONITORING	–	+
COMMUNICATION	±	±

Figure 5. Capability assessment of POEM



different stakeholders are involved. Participatory processes involving all stakeholders for instance have been proposed as one way of increasing social support for the recommendations of LCAs (Bras-Klapwijk and Enserink, 1997).

This links to integrational capabilities. Considering a product's environmental characteristics across its lifecycle is relatively new. Therefore, firms working on POEM have to develop new routines and new organizational capabilities. Internally this is increasingly dealt with by designing products using principles such as ecodesign (applying environmental considerations to design decisions). Yet, the mere application of such principles does not necessarily lead to product-oriented environmental management. This also depends on the external integrational capabilities: to what extent are chain partners involved in POEM and how is this arranged? According to Rocha and Brezet (1999, p. 38), building a capability for ecodesign 'requires the allocation of appropriate resources, assignment of responsibilities, building expertise [...] and internal and external communication'. Environmental issues are increasingly being discussed within supply chains. Examples include issuing supplier requirements or developing product take-back structures, for example in the automotive industry. This relates to the third stage in the capability cycle: monitoring. By applying monitoring standards one can impose on chain partners the need to be clear about a product's environmental characteristics. Also, a firm can better determine to what extent its own objectives are met. Internally this might be more difficult, depending on the position of the department or function that is assigned the monitoring task.

Finally, the communication capabilities demonstrate the relative novelty of this issue. Internally, justification of the firm's behaviour is an important element of POEM. The variety of eco-labels and the relative enthusiasm

with which these are used by firms emphasize this. However, clarity on these different standards, certificates and labels, has not yet been achieved, hampering communication on POEM and on such labels and certificates, both internally and externally.

Tropical hardwood certification

Many developing countries export tropical hardwood in large quantities. This wood is especially valued as a raw material for the western building markets. To meet this demand, rainforests in several developing countries are being destroyed at an increasing rate. One initiative to ensure sustainable production of tropical hardwood is the certification scheme of the Forest Stewardship Council (FSC). The FSC is an international non-profit organization founded in 1993 to support environmentally appropriate, socially beneficial, and economically viable management of the world's forests. The FSC is concerned with all types of forests worldwide, including plantations, and the chain of custody. It is an association of a diverse group of representatives, including environmental and social groups, the timber trade, forestry professionals, community forestry groups and forest product certification organizations from around the world (Kolk, 1996; Jenkins and Smith, 1999).

The 'FSC Principles and Criteria' is the principal international standard for sustainable forest management. The FSC has introduced an international labelling scheme for forest products that provides a credible guarantee that these products come from well managed forests. All forest products carrying the FSC logo have been independently certified. Forest inspections are carried out by a number of FSC accredited certification bodies, which are evaluated and monitored to ensure their competence and credibility. The FSC certificate confirms the checking of the entire chain of custody: tracking the timber from forest to shop.



	INTERNAL	EXTERNAL
INTERPRETATION	+	+
INTEGRATION	–	±
MONITORING	–	+
COMMUNICATION	+	+

Figure 6. Capability assessment of tropical hard wood certification

Figure 6 presents a capability assessment of such tropical hardwood certification. Because of the broad range of the criteria for the FSC certificate, internal and external interpretation are well managed. The integrational capabilities are the main difficulty in hardwood certification. Salespeople and purchasers receive little training on how to deal with the dilemmas that arise, and the increased price for certified wood is the only incentive to stimulate durable production in third world countries. The monitoring activities are performed by independent organizations around the world, but internally monitoring is hardly used. Finally, communication capabilities are well developed. Internally, reports are produced on the environmental aspects of hardwood production, while externally, the FSC logo demonstrates to every wholesale trader and end-user that a specific piece of hardwood is produced under the FSC guidelines.

DISCUSSION AND CONCLUSIONS

In this paper we have proposed a framework to assist firms in developing and assessing the organizational capabilities required to address and identify relevant stakeholder demands in terms of responsible chain management. This framework was built upon the literature on capabilities and stakeholders, with an important role for the concept of responsibility. A firm's interpretation of responsibility is considered to also influence its perception of stakeholder demands. By viewing the development and maintenance of organizational capabilities for responsible chain management as a continuous process, as reflected in the capability cycle, a firm

could use the derived framework to assess its own capability base concerning responsible chain management and detect possible weaknesses.

Reasoning from a stakeholder viewpoint, it is essential for a firm to have a clear view of the expectations of its stakeholders. Responsibility, and therefore responsible chain management, cannot be laid down in a fixed set of guidelines. Responsibilities are allocated, recognized and acknowledged by the different parties in a continuous, dynamic process. Therefore, communication between stakeholders, including the employees and managers in an organization, is necessary to reach a clear view of an organization's responsibilities. An analogy with the plan-do-check-act cycle in quality management is apparent in this approach.

The theoretical framework was applied to three practical initiatives in responsible chain management, hence illustrating its applicability and highlighting some strengths and possible omissions in these new management initiatives. The framework is based on the assumption that responsible chain management requires an interaction between the business context and the activities of a company. Therefore a balance between internal and external capabilities on four levels is suggested: interpretation, integration, monitoring and communication. The application of the framework to the three initiatives highlighted that each one was lacking in certain respects.

A difficulty with the current framework, as in many applications of the resource-based view of organizations, is firm specificity. Because of specific firm characteristics, it is difficult to create a single overall framework, unless it is phrased in rather general terms. The capability cycle and the assessment framework are therefore stated in general terms, although it may be possible to develop a more tangible terminology. Despite this, the framework has value in that it, at least, draws attention to omissions. Reflections hence are stimulated



on the reasons why certain capabilities are omitted and the possible consequences.

Ways of making the framework more specific could be considered in further research. First, one could imagine that, to a certain extent, issues of responsibility are similar across a certain sector of industry. The Responsible Care code in the chemical industry, for example, demonstrates a collective response by participating companies in the areas of community relations and distribution, while the internal activities associated with the implementation of this code differ among these companies (Howard *et al.*, 1999). Such research could support our framework since sectoral approaches could bring more unity to the external activities. The framework could assist in categorizing differences in approaches across an industry, demonstrating possible omissions and hence opportunities for improvement. A second way to move this framework forward could be to differentiate on firm size. Small firms might address these issues of responsibility differently to a larger firm. The role of industry associations could be one starting point, given their influence in certain sectors of industry, particularly on smaller firms. Another starting point could be the position of key players in the product lifecycle, as the example of C&A illustrated. Further research also could consider how the framework could be embedded in a firm's strategy and operations. Although the issue of responsible chain management has been singled out for analytical purposes, ultimately this issue could be integrated within the general activities of a firm.

The capability assessment framework is a first attempt to conceptualize an integrated model for responsible chain management based on organizational capabilities. Its application to existing initiatives, like SA8000, POEM and hardwood certification, results in an evaluation that raises some critical questions about the strengths and weaknesses of each initiative. Although the first results

seem promising, we acknowledge that the framework has room for further development. Therefore, we would welcome any critical analysis of the framework, or a further debate about the capabilities necessary to ensure the important notion of responsible chain management.

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